

SUBJECT	YEAR	TERM
COMPUTER SCIENCE	7	5 & 6
TOPIC		
INTRODUCTION TO GRAPHICS		
CONTENT (INTENT)		
<p>PRIOR LEARNING (TOPIC) No previous learning is necessary with this unit. Pupils may have previously covered binary representation of text which would help to reinforce their understanding of how image data can be represented. They may have been taught the importance of design and layout.</p>		
<p>The unit is subdivided into six learning hours spread across six lessons. It is an introduction to graphics and graphic file types. The unit explores how bitmap and vector images are represented and stored by the computer. There is also opportunity for pupils to practise skills in design, photo-editing and image manipulation using a suitable graphics package. The pupils' final posters are put into an assessment portfolio.</p>		
<p>FUTURE LEARNING (TOPIC): Graphics Project</p>		
IMPLEMENTATION		
KNOWLEDGE	SKILLS	
<p>At the end of this Unit all pupils should be able to:</p> <ul style="list-style-type: none"> • Explain that bitmap images are made up of individual pixels • Explain that in the case of a vector graphic, properties such as position, fill, stroke colour and dimensions are stored • Create and manipulate a simple group of objects to form a logo design • Change the saturation, brightness and contrast in an image • Add text to a graphic • Use a graphics package to create an artwork; for example, a movie poster <p>Most pupils will be able to:</p> <ul style="list-style-type: none"> • Describe the characteristics of bitmap and vector graphics, state the advantages of each and give examples of situations in which each would be appropriate • Use fonts consistently and carefully to convey a particular message or image • Use white space effectively • Use layers in the creation of an artwork <p>Some pupils will be able to:</p> <ul style="list-style-type: none"> • Use the advanced facilities of a graphics package, for example to manipulate, cut out, and alter images • Create a series of two or more posters in the same style, using a combination of layered images and fonts effectively to convey a message 	<p>Learning Skills: Synthesis: Pupils will bring ideas together and create solutions to staying safe online Problem solving: when deciding how to solve a problem and why?</p> <p>Life Skills: Collaboration: on complex moral and ethical issues in computing Resilience: when working on digital image manipulations</p> <p>IT Skills: Software: Graphic design software such as Photoshop, Fireworks and Illustrator Microsoft Excel to create bitmap images. PowerPoint for theory.</p> <p>Literacy Skills: Digital literacy: Learning the software terminology Vocabulary: Learning new vocab and learning how it links to other subjects such as art and photography</p>	

IMPACT

Pupils will work on different sections of the project each lesson. These will be assessed separately. They will create vectors using shapes and bitmaps using spreadsheet squares. These will be marked on professional look and suitability. They will learn software skills each lesson and will add these skills to a poster which will be submitted as their final assessment. This will be marked according to the department's marks scheme with grades 9-1. Pupils will have access to the rubric in order to understand how to improve their grade. Pupils will also complete min MCQ assessments during lessons to check learning of theoretical terms.

New Computing at Schools (CAS) Attainment Targets (partially covered in this Unit)

- understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits
- undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users
- create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

HOW CAN PARENTS HELP AT HOME?

Showing an interest in the topic is always the biggest help, as well as ensuring they are completing their homework to the highest effort standard. If lessons are missed, the VLE can be used to catch up with content. Pupils can practice their graphic design skills at home using free software such as Vectr, Inkscape, or Gimp. Parents can always join in and learn graphic design too, tutorials are available on the VLE, under the Creative Media resources section.

HELPFUL READING/FURTHER DISCUSSION

READING

CGP KS3 Computing Complete Revision & Practice

Hodder Compute-IT: Computing for KS3

Photoshop Creative or Photoshop and Photoshop Advanced magazines

Websites:

- BBC Bitesize (graphic design): <https://www.bbc.co.uk/bitesize/search?q=graphic+design+ks3>
- Website used for free graphic design software: <https://inkscape.org/> or <https://vectr.com/>
- Website used for tutorials: <https://www.photoshopesentials.com/>
- Website for colour theory: <https://color.adobe.com/create>

VOCABULARY

Vector, bitmap, properties, scalable, analogous, complementary and monochromatic colour schemes, pixel, bit, byte, dpi, gradient fill effects, saturation, brightness, contrast, resolution, layer, white space

CAREERS

- Advertising designer
- Branding designer
- Creative director
- Editorial layout artist
- Game designer
- Games developer
- Graphic designer
- Marketing Director
- Package designer
- Software engineer
- Typographer
- UX designer
- Web designer

EXTRA SKILLS

- Communication
- Teamwork
- Leadership
- Problem-solving
- Time management
- Organisation
- Report Writing
- Software Skills

PROGRESSION

- Online tutorials
- Graphic design clubs
- Level 2 Creative iMedia
- BTEC Creative Digital Media Production

